

June 28, 1958

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# SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE



**Night Work**

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## MEDICINE

# Medical Reporting Good

Today, when accurate reporting of science is particularly important, leaders of American medicine commend the medical reporter for a job well done.

➤ LEADERS of American medicine view with approval by a heavy majority the popular reporting of medicine to the American public through newspapers.

They also agree that the quality of medical reporting has improved in recent years.

In a SCIENCE SERVICE Grand Jury inquiry, in which 75 presidents of national and state medical organizations were asked: "Do the newspapers, in your opinion, in general do a medically competent and socially useful job of reporting medical progress?" the results were:

Yes, 77% (58); No, 16% (12); Not Voting, 7% (5).

To the query as to whether the quality of medical reporting in newspapers has improved in recent years, the response was:

Yes, 89% (67); No, 8% (6); Not Voting, 3% (2).

Realizing that some medical authorities do not agree that everything published in professional journals is suitable for public reporting, the jury was asked to vote on this question:

Does the daily press, in your opinion, have both right and obligation to relay to the public new medical advances published in authoritative journals or read at professional societies even if not yet widely accepted in clinical practice?

The result was: Yes, 54% (40); No, 33% (25); Not Voting, 13% (10).

Upon the suitability of reporting medical reports, there was a considerable opinion that publication of medical news should be

delayed until there is authoritative clinical demonstration and acceptance of the drugs and procedures.

Some of the comments were:

"The public cannot judge, false hopes arise and undue pressure is placed upon physicians, with resulting harm and expense to the patient."

"Caution should be exercised to avoid the crushing disappointment patients feel when they find that the facts received from the doctor are less encouraging than the newspaper report."

"The average newspaper readers have so little knowledge and understanding of medical terminology that they often misinterpret what is accurately reported."

"Many research workers, anxious to arouse public interest and further support of their project, will often imply clinical significance to their findings when actually none exists except in the imagination of that particular investigator."

"More harm can be done by reporting information not scientifically proved than if withheld until undisputable data are accumulated."

"If the idea of not publishing scientific or technical information in newspapers were extended to all fields, as it logically might be, it would be very unfortunate for the general public's education."

"There is too much optimism in headlines and warnings are delayed or deleted."

Answers to the SCIENCE SERVICE Grand Jury inquiries are given anonymously in

order to assure freedom of opinion. In the medical reporting inquiry, 68% of those invited answered the questionnaire.

Science News Letter, June 28, 1958

## ASTRONOMY

## Speeding Meteors Have Heat Higher Than Sun

➤ METEORS slamming into the earth's atmosphere at astronomical speeds produce temperatures higher than those of the sun's surface.

Dr. Klaus Oswatitsch reported this and other facts about extreme speeds to the National Advisory Committee for Aeronautics meeting in Washington, D. C. Typical of all cases, he found, is the conversion of the high energy of motion into extreme states, with temperatures of several thousand degrees, frequently associated with ionization of the gas involved.

The sun-like temperatures can also be produced in the laboratory using shock tubes filled with light gases, Dr. Oswatitsch reported. For space travel rockets, he concluded, the lightest possible gases are desirable for propulsion, since the molecules have considerably higher flight velocities.

Science News Letter, June 28, 1958

## ASTRONOMY

## Discover Center of Milky Way Galaxy Expanding

➤ THE "SURPRISING" and mysterious discovery that the nucleus, or center, of the Milky Way galaxy is expanding was reported by a group of astronomers.

The hydrogen gas of a spiral arm in the Milky Way's gigantic pinwheel of stars is streaming outward as well as rotating around the galactic hub.

Dr. H. C. van de Hulst of The Observatory, Leiden, The Netherlands, told the Solvay Congress meeting in Brussels, Belgium, the discovery was a product of tuning in on radio waves at various frequencies using the 82-foot-diameter radio telescope at Dwingeloo, Holland.

The sun and its planets are about three times as far from the galactic center as the expanding region is. The outer limit of the expanding region is about three kiloparsecs, or 60 thousand billion miles, from the center.

The rotation speed of the expanding arm is 120 miles a second. The expansion is 30 miles a second. There is no indication yet that the stars and dust in this inner arm are also expanding.

Twenty-five astronomers and physicists from ten countries attended the Congress.

Those from the U. S. included Dr. Walter Baade and Dr. A. R. Sandage of Mt. Wilson and Palomar Observatories, Pasadena, Calif.; Dr. T. Gold of Harvard University, Cambridge, Mass.; Dr. W. W. Morgan of Yerkes Observatory, Williams Bay, Wis.; Dr. J. Robert Oppenheimer, director of the Institute for Advanced Study, Princeton, N. J.; and Dr. Harlow Shapley, former director of Harvard College Observatory.

Science News Letter, June 28, 1958



**ATOM-AGE TRAIN**—The precision tracking ability of a proposed rubber-tired, nuclear powered train is demonstrated in this operating model of the 450-foot train. Unique features of the unit, designed by R. G. LeTourneau, Inc., Longview, Texas, include all wheel drive, steering from either end and a greatly improved suspension system for smooth riding. It is said to be adaptable for use with either atomic reactors or conventional engines as the power source.



# SCIENTIA INTERNATIONAL

## NOVAS DEL MENSE IN INTERLINGUA

► **Diabete.**—Super le base de un studio de 20 menses con un serie de 1.030 patientes de diabete, un gruppo de medicos de Boston ha publicate un evaluation definitive del rolo de tolbutamido in le tractamento de diabete. Le principal advantages del droga es le simplicitate de su administration—illo se prende per via oral—e le bassissime grado de su toxicitate. Le major periculo inherente in le disponibilitate de tolbutamido es le consequentias de su uso per patientes in le casos de qui illo non es un agente appropriate. In general, tolbutamido es a recomendar solmente in le restringite gruppo de diabeticos qui remane post le exclusion de (1) omnes in qui le morbo commenciava ante le attingimento del etate adulte, (2) omnes in qui le morbo es ancora regulabile per restrictiones dietari sol, e (3) omnes in qui le dose de insulina requirite per die pro regular le morbo excederea circa 20 unitates.

► **Physica Atomic.**—In analysar le gas produce per bacterias in sedimentos marin ab le fundo del oceano vicin al Bahamas, scientistas del Bureau National de Standards esseva frapate per le bassissime valor obtenite pro le contento de deuterio. Il pare que le bacterias (probabilemente un specie de *Pseudomonas*) ha le capacitate de concentrar deuterio. Si iste theses es confirmate, on pote pensar al possibilitate de utilizar tal bacterias in le production de deuterio—un material de alte importantia in le maneamento de reactores nucleari, presente in abundantia in le aqua del mar sed costose e difficile a extraher.

► **Diagnostic.**—Progressos in le nove technica del "diagnose per fluorescentia" esseva reportate per plure grupos de recercatores al recente congresso del Societate American de Bacteriologia. Le principio del methodo es fortiar specific organismos pathogene a revelar lor presentia per le emanacion de un typic fluorescentia sub le microscopio a lumine ultraviolette. Le agente que fluoresce es introduce per usar lo in marcar le anticorpo que es specific pro le organismo que on vole deteger. Si presente, le organismo se combina con le anticorpo, e isto lo rende distinctemente fluorescente. Le advantage del methodo (que non es sin difficultates) consiste in su rapiditate. Illo se ha jam provate utile in le detection—in alcun minutos in loco de in alcun dies—de streptococcus gruppo A. Rapide identification de pathogenos significa le possibilitate del prompt initiation de mesuras therapeutic.

► **Satellites.**—Le spirito de cooperativitate international que characterisa le varie programmas de recerca del "AGI" (=Anno Geophysic International) deberea establir se permanentemente. In circulos scientific statunitense on discute seriemente le desirabilitate de poner le installationes que iste pais ha disveloppate pro le lanceamento de satellites artificial al disposition de scientistas de altere nationes. On crede que si tal altere nationes non ha succedite a lancar satellites, le ration non es lor inadeguate technic o scientific sed exclusive mente lor manco de sites e installationes de lanceamento le quales America possede gratias, super toto, a su geographia.

► **Recercas de Cancere.**—In experimentos con duo racias de rattos—le un susceptible de disveloppar cancere, le altere resistente a cancere—Dr. B. Sekla del Universitate Carolese a Praga in Checoslovachia ha demonstrate le existentia de un "factor anti-canceroso" que pare esser simile al anticorpos de altere morbos e que pote esser transmittite per le lacte materno. Rattos neonate de racia cance-

ro-susceptibile deveniva frapamente resistente a cancere quando illos esseva nutrite per "matrastes" de racia non-cancero-susceptibile.

► **Gynecologia.**—Sub le nomine de Provera, le firma Upjohn de Kalamazoo in Michigan produce un hormon synthetic de structura e action simile a progesterona. Progesterona es naturalmente produce per le ovarios. Illo inhibi le ovulation in feminas pregnante e simultaneamente preveni le contractiones e convulsiones del utero que resultarea (e, de facto, al fin del pregnantia resultara) in le expulsion del feto. Proque Provera ha le mesme duo effectos, illo es (1) un promittente agente de contraception (i.e. gratias a su capacitate de inhibir le ovulation) e (2) un droga pro le prevention de abortos prematur (i.e. gratias a su capacitate de calmar le utero e mantener su elasticitate). Provera es un droga de administration oral.

► **Astronomia.**—Le terra pertine al systema solar que es un stella minor in nostre galaxia que es un particula in un de numerose grupos de galaxias. Dr. G. C. Abell del Universitate California crede haber constatate que le grupos de galaxias, de lor parte, es organisate in super-grupos (i.e. grupos de grupos) de galaxias.

► **Chassa.**—In le passato, un maximo annual de 50 ursos polar esseva occidite per chassatores human. In 1957, le total esseva 206, gratias (o forsan: disgratias) al aeroplano que rende possibile le persecution del ursos mesmo quando illos ha prendite refugio super insulas de glacia flottante.

► **Phytopathologia.**—Le infection de un planta per un typo de virus resulta frequentemente in su protection contra le effectos de un altere typo de virus. On ha credite usque nunc que iste phenomeno occurre exclusive mente quando le duo typos de virus es mutualmente multo affin. Dr. A. J. Thomson del Universitate Cambridge in Anglaterra ha constatate que le phenomeno es etiam possibile in le caso de complete differente typos de virus.

► **Technologia Medical.**—Specimens del contento gastric e intestinal pote esser obtenite a precise mente pre-determinate sites, gratias al methodo "pyxygraphic" disveloppate per Dr. J.-P. Perrenoud de Neuchatel in Switza. Le patiente ingere un capsula, le sito del qual le medico observa per radios X. Le capsula—con dimensiones de 25 x 8 mm—pote esser aperite e claudite per un mecanismo a activation magnetic.

► **Technologia Militar.**—Le arma statunitense experimenta con un rochetta que le soldato individual pote portar super su dorso sed que, de su parte, es etiam capace a portar le soldato a transverso un distantia de usque a 100 m, a un altitude de usque a 15 m.

► **Alimentos.**—In Sud-Africa, pan continente 2% "farina de pisce" es offerite como solution del problema de dietas inadeguate mente provide de proteina. Le "farina de pisce" es fabricate per un serie de processos extractori, solutori, e desicatori que elimina complete mente le gusto e le odor de pisce sed lassa le valor de proteina intacte.

► **Radiation.**—Secundo un investigation cursori per Dr. J. L. Haybittle de Cambridge in Anglaterra, le quadrante luminose de certe typos de horologio-braccialetto es satis ric in curies pro exponer le portator—in le curso de 16 horas per die—a circa duo tertios del maximo permittibile de roentgens.

Science News Letter, June 28, 1958

## GENERAL SCIENCE

### Reading Interlingua

► **YOU CAN READ Interlingua** if you had no more than one semester of high school French or Spanish or Latin and flunked it. You can read and understand a great deal of it even if you had never had contact with any foreign language.

Send this page to an acquaintance abroad and tell him that he can get additional information about Interlingua from Alexander Gode, Science Service's Interlingua Division, 80 E. 11th St., New York 3, N. Y.

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Science News Letter, June 28, 1958

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## PHYSICS

# Scientists "Play" Golf

► SCIENTISTS are playing golf in the laboratory.

The scientists, who want to help all golfers from the professional to the duffer, are studying how a golf ball behaves. Their results so far include the following:

1. The most consistent thing about a good golfer is his swing: the velocity of his club at the bottom of a swing does not vary significantly.

2. There is much more variation in ball velocity, which seems to depend more on how squarely, rather than on how hard, the ball is hit.

3. The important factor for distance is the angle of the ball's elevation, and the best angle appears to be 11 or 12 degrees above horizontal.

4. For a well-hit ball, there is a fairly close correlation between the total length of the drive, including final roll, and the velocity of the ball when it leaves the club.

5. The hardness of a ball, within certain limits, has little effect on driving distances. Photographs of a golf ball at time of impact show that a softer ball is flattened out more and stays in longer contact with the

club than a harder ball. Better control can thus be achieved and the soft ball will require less critical accuracy of impact than the hard ball.

The scientists' studies were undertaken because the standards of performance for golf balls have remained unchanged for the past 16 years. The United States Golf Association Rules specify a test in which the ball shall not travel faster than 250 feet a second. If the ball were much livelier, golf courses would tend to lose their challenge to the player.

Although the Association has a test machine and periodically checks balls of all makes, it would prefer a portable machine to test balls at championship tournaments. The studies so far have shown that the velocity limit of 250 feet per second corresponds to a 250-yard drive, probably a well-chosen value to represent the performance of a superior player.

The studies of golf ball behavior are reported in the *Industrial Bulletin*, published by the Arthur D. Little research company, Cambridge, Mass.

Science News Letter, June 28, 1958

## ARCHAEOLOGY

# Find Skyscraper Temple

► A PREHISTORIC skyscraper temple, as tall as a modern 20-story building, has been snatched from the engulfing growth of the jungle in Tikal, in the northern El Peten region of Guatemala.

This impressive stone building is one of scores of temples, palaces and other structures in a pre-Columbian Mayan ceremonial center which may date back as far as 500 B.C. It was one of the most densely populated regions between 300 and 900 A.D., the Maya classic period.

Evidence of temple desecration and violence in those early days has been uncovered. Digging down into the collapsed masonry filling three rooms in the Temple of the Red Stela, Dr. Edwin M. Shook of the Carnegie Institution of Washington, field director of the expedition, found the smashed bottom half of a beautifully inscribed monument. The monument had evidently been deliberately broken. The top half was missing and a crude masonry altar had been built over the fragments, possibly to hide them. The lower portion of the stela contains some of the most beautifully carved Maya hieroglyphics yet discovered. The entire carved front and sides had been painted a brilliant red.

Evidence was found that after many years, people tore into the crude altar, built fires and smashed pottery over the debris.

Tikal is an early example of formal city planning and contains an elaborately constructed network of graded roads linking the central area with outlying districts.

Tikal is being salvaged from the inroads

of the tropical forest and restored as a tourist attraction by archaeologists of the University of Pennsylvania Museum in cooperation with the Guatemala government.

When Tikal was rediscovered about a century ago, the site was accessible only by mule-back. Now tourists are flown into the area on twice-weekly flights at the rate of 1,000 a year.

Science News Letter, June 28, 1958

## MEDICINE

# Oral Diabetic Drug Only Partially Helpful

► THE ORAL DRUG that freed many diabetics from the bothersome insulin shot routine has proven useful to only a select and limited group.

The results of a 20-month study of tolbutamide (Orinase) indicates the drug works best in middle-aged and elderly diabetics who would otherwise take relatively small doses of insulin.

The study substantiates a warning published one year ago in the *American Medical Association journal* stating, in effect, that tolbutamide is not a substitute for insulin and could be used only in certain types of diabetic patients.

The 20-month study included 1,030 diabetics, all of whom were given tolbutamide. Of these, 288 were immediately eliminated from the study because they needed insulin to control their diabetes, or because it could be controlled by proper diet.

The remaining 772 patients were composed almost entirely of middle-aged persons with maturity-onset type diabetes. In addition, they had formerly been using insulin in dosages of about 20 units or less daily.

Eight of the 772 experienced toxic side effects ranging from skin rashes to heartburn. The results show the incidence of toxicity to be extremely low. Therefore, the doctors said, the chief problem is not the fear of toxicity from tolbutamide, but rather, the effects resulting from administering the drug to patients whose diabetes cannot be controlled by tolbutamide.

Good control of blood and urine sugar levels was obtained in 407 and fair control in 143 of those who were switched to the drug. The remaining 222 were classified in various "failure" groups, that is, patients who, for one reason or another, did not maintain the criteria of the study.

In conclusion, Drs. Hellmut Mehnert, Rafael Camerini-Davalos and Alexander Marble, Boston, warn in the *Journal of the American Medical Association* (June 14) that:

"In the selection of patients to be treated with tolbutamide, care should be taken to avoid, on the one hand, unnecessary use in those with whom dietary restriction will suffice and, on the other hand, unwise use in those requiring insulin for maintenance of control of diabetes."

Science News Letter, June 28, 1958



**ITALIAN REACTOR**—Technicians of *Atomic International, North American Aviation, Inc.*, fit precision milled graphite reflector blocks around the "core" of the 50-kilowatt nuclear research reactor being built for the Enrico Fermi Nuclear Study Center in Milan, Italy. The core, which will contain uranium in a water solution as fuel, is upside down for easier assembly. The reactor will be used for research and training in nuclear and associated fields.

## MEDICINE

# Child Safety Low

Children are particularly accident-prone during the summer months, when motor vehicle accidents, drownings and poisoning take a huge toll in lives lost.

► SUMMERTIME is the most favorable season of the year for children's accidents.

The frequency of accidents among children increases directly in proportion to the rise in temperature.

Accidents cause approximately 13,000 deaths among children between the ages of one and 14 each year in the United States. In addition, between 40,000 and 50,000 are permanently injured and it is estimated that more than 1,000,000 are brought into the doctor's office as the result of accidents. These figures are reported by Dr. Neil F. Duncan of Edmonton, Alberta, Canada, in the *Canadian Medical Association Journal* (April 15).

A study based on children's accidents in Alberta revealed that the number of accidents rose during the summer months. Fatal accidents occurred most frequently among the under-one-year age group while non-fatal accidents were highest in the one-to-two-year age group.

More boys than girls suffer accidents except in cases of poisoning. Motor vehicle accidents and drowning took the highest toll, especially during the summer recreation months.

Forty-four percent of all accidents occur between 12 noon and 5 p.m., while 26% occur between 6 a.m. and 11 a.m.

Dr. Duncan cited a small study which revealed accident repeaters were of three main types. The first is the overactive,

restless child who tends to be impulsive. The second is the more immature child who lacks parental supervision and insists on autonomy. The third type is the hostile child who comes from a bleak and dreary home.

In contrast, the children of an accident-free group tend to be very timid, submissive and controlled.

But the main offenders, Dr. Duncan says, are the parents who leave turpentine in "coke" bottles, poisonous medicines within the reach of the small child, and unlabeled bottles on the shelf. They are the ones who "do not see" the child that runs across the path of the car.

Recommendations have been made to establish safety standards for the inflammability of textiles for children's clothes, the labeling of paints and other coloring materials to minimize the use of toxic substances on toys and furniture, the design of sleeping garments to avoid strangulation or suffocation, and the redesign of toys and furniture to minimize the possibility of injury.

Another positive step toward reduction of children's accidents has been the establishment of poison control centers in many cities in Canada and the United States. Their purpose is to minimize the damage from potentially toxic substances by improved methods of prevention and better treatment of poisoning.

Science News Letter, June 28, 1958

## RADIO

Saturday, July 5, 1958, 1:30-1:45 p.m., EDT "Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio network. Check your local CBS station.

Dr. Gerald Laxer, director of science and technology, The Wool Bureau, New York, will discuss "Wool, Fiber of Past and Future."

## PHYSICS

## Nature "Whistling" At Earth Inaudibly

► NATURE is "whistling" at us but in such a low key it cannot be heard without special equipment.

The subaudible electromagnetic radiation has been detected by four Canadian scientists. It has a frequency range of from one-tenth to 30 cycles per second, whereas the lowest tone at all audible to the human ear has a frequency of 15 cycles per second.

The radiation is recorded on a magnetic tape that moves at 15-thousandths of an inch each second. The tones are then made audible by playing back the record at 15 inches per second. They are heard as whistles, rising or falling notes lasting for many minutes on the original record, the scientists report in *Nature* (May 3).

The whistles are particularly prominent during geomagnetic storms, when the earth's magnetic and electric fields are seriously disturbed by bombardment of charged particles believed to come from the sun.

Drs. H. J. Duffus, P. W. Nasmyth, J. A. Shand and Charles Wright of the Pacific Naval Laboratory, Esquimalt, British Columbia, report their work on the subaudible electromagnetic radiations is being extended with the aim of finding the source of the mysterious "noises."

Science News Letter, June 28, 1958

## EVOLUTION

## Missing Turtle Albumin Aids Evolution Study

► SEVERAL SPECIES of turtles apparently lack certain proteins found in human and other mammalian as well as amphibian blood, two researchers report in *Science* (June 13).

These "provocative" findings may help scientists better understand the processes involved in the development and evolution of vertebrates.

Using paper electrophoresis techniques, Elias Cohen and Gunnar B. Stickler of the Roswell Park Memorial Institute, Buffalo, compared the blood sera of humans and turtles. Blood serum is the clear, slightly yellowish fluid that remains when blood clots and the blood cells and fibrin are removed. They could not find the albumin-like components, or proteins, in any of three major families of turtle.

Analysis of turtle sera showed "marked differences" compared with snake, alligator, rat and human sera. Turtle sera contained less than half the amount of total protein in rat and alligator sera.

Dr. Stickler is now at the Mayo Clinic, Rochester, Minn.

Science News Letter, June 28, 1958



**LARGEST DOME**—This architect's model of the Pittsburgh, Pa., civic arena shows the stainless steel dome in its retracted position. The roof consists of eight sections, six of which are movable. The open air stadium will have the largest movable dome in the world, 415 feet in diameter, that can be converted to a weatherproof auditorium "at the press of a button." Estimated cost of the roof is \$890,000. The auditorium, including mall and parking area, will occupy some 20 acres and seat between 7,500 and 14,000 persons depending on the event being held. The entire civic arena, described as a \$20,000,000-structure, is part of a city redevelopment program.



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## ERRATA, Vol. 73, Nos. 1-26, January-June, 1958

PAGE	TITLE BEGINS	CORRECTIONS
37	New Class of	Par. 4, line 2, after several insert similar; lines 2 and 3, delete called polyethylene sulfonates; par. 5, line 1, delete other; line 1, after chemicals insert which did not give these effects, called polyethylene sulfonates, Title, line 2, par. 1, line 2, par. 3, line 4, 3,180 for 4,700.
38	Find Radio Waves	Col. 2, last par., Stanislaus for Stanislaus.
85	Star Positions	Col. 2, par. 3, line 4, after linoleic acid delete rest of sentence; par. 4, line 3, after stearic acid delete found in butterfat, coconut oil, animal fats and shortening.
179	Reverse Atherosclerosis	Col. 2, line 1, reserve for research. Line 7, legume for grass.
181	Rocket Clubs	Par. 2, line 4, Eugene Kadak for E. Kadah.
215	Caption	Par. 3, line 1, ticks for insects; par. 6, line 1, read The tick is dangerous, second in
235	Radar Antennas	Par. 2, line 5, T. A. Robertson for T. A. Robertson.
380	International Tick	
395	Noise of	

## EVOLUTION

# Best Seller for a Century

This year marks the centenary of the publication of a revolutionary scientific work, Charles Darwin's "On the Origin of Species," a best seller from the day of its appearance.

By BENITA TALL

➤ ALMOST ONE HUNDRED years ago, on July 1, 1858, an epoch-making paper was read before a famous English scientific society. Those attending the meeting of the Linnean Society that date heard a joint communication entitled "On the Tendency of Species to Form Varieties; and on the Perpetuation of Varieties and Species by Natural Means of Selection."

One of the authors was A. R. Wallace, a young teacher and "beetle and butterfly collector." The other was Charles Darwin, a naturalist fairly well-known to scientists of the time for his studies of fossils and for his theories, expressed mostly in private communications, about the possible causes of evolution.

Publication of the paper launched both men, but particularly Darwin into the center of the scientific world with the magic words "natural selection" and "struggle for existence."

The name Darwin became synonymous with a revolutionary, and sometimes ridiculed, theory explaining the evolution of different species of animals and plants.

For Wallace the joint paper meant fame. It placed him among the leading exponents of what came to be called Darwinism. But it always remained a kind of fame-by-association.

Darwin was the pivotal figure when publication of the paper made his private theories public.

## Revolutionary Theory

Darwin himself felt this was premature publication of concepts he had been developing for some 20 years. But it forced him to prepare the great work of his life. "On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life" appeared on Nov. 24, 1859, when Darwin was 50 years old. The whole edition of 1,250 copies was sold out on the first day.

It is difficult now, 100 years later, to imagine the furor caused by this book's publication. It was not read solely by naturalists and other scientists. The man-in-the-street read it. Theories appearing on its pages were argued in scientific societies, in saloons and sitting rooms, in coffee houses and gentlemen's clubs. Newspapers carried stories. Public lectures brought opponents and proponents together to argue the case for natural selection.

What was this natural selection? For Darwin and his followers it was, and is, the main causal agency of evolution. Because of natural selection mainly we have the

great number of different species in the plant and animal kingdoms.

Natural selection, as its name implies, is the selection by non-human processes or instruments of those species better adapted for survival in a given environment. It is similar to the artificial selection carried on by the farmer when he selects the best milk-producer from his dairy herd for breeding purposes.

Perhaps a recent observation of natural selection can show how it operates in terms of evolution.

## Black Moths from White

Scientists have observed that dark forms of about 70 species of moths have been increasing in industrial areas of Great Britain. One species, with white wings that carried fine black spots, has given way to a black form that dominates these coal-smoke blackened areas. This has happened due to natural selection against the conspicuous white form. Birds will feed on the more conspicuous moth preferentially.

Evidence of the intensity with which natural selection influenced the development of the new form was gained when both light and dark moths were released in industrial and rural wooded areas. Counts from traps showed the less conspicuous form was about twice as "fit" for survival as the more conspicuous.

Nature had selected the individual moths that carried the black genetic determinants for survival, thus giving rise to what became a new form.

In the "Origin of Species" the facts for natural selection, or as the scientist Herbert Spencer, a contemporary of Darwin's, phrased it, "survival of the fittest," were presented.

Darwin worked on the foundations provided in the works of Sir Charles Lyell, particularly the Principles of Geology which gave evolutionists the enormous time span they needed. He was admittedly influenced by Malthus' statements on human populations and the struggle for existence.

The times were also ripe for the theory of natural selection.

Evolution and various theories accounting for it was an important scientific topic. An American W. C. Wells formulated what was practically a Darwinistic statement of natural selection in an 1813 paper delivered before the Royal Society of London. Patrick Matthew, a Scotsman, published a book in 1831 that, in Darwin's own words, "most expressly and clearly anticipated" his views.

Perhaps the root of Darwin's genius lay, not in his formulation and enunciation of the theory of natural selection, but in his unceasing attention to the facts with which

to prove his theory. He could think out the consequences of long chains of observations and marshal his evidence, presenting it clearly and forcefully. He had a love of scientific work, experiment and detail that dominated his life.

Actually, many of the facts Darwin used to support his theories were uncovered during his five-year cruise on board the H.M.S. Beagle.

The boy of 22 who signed on board the ship as naturalist in 1831 and set out on a voyage through the Atlantic and Pacific Oceans returned as a man with evidence for a new theory of evolution.

He spent some 50 years studying and observing nature, living quietly and for the most part taking little part in the scientific battles engendered by his theories.

In many ways Darwin himself, and his theory of evolution, was a product of natural selection.

His grandfather, Erasmus Darwin, was known both as a distinguished medical doctor and a poet. He even anticipated his grandson's venture into the why's and wherefore's of evolution with some theories of his own.

Robert Darwin, Charles' father, was also a very successful physician. His mother was the daughter of Josiah Wedgwood—the famous potter who gave his name to the blue ware that bears delicate relief figures in classic Greek poses.

## Survival of the Fittest

Darwin was also fortunate for, in addition to his intellectual inheritance and environment, he never had to earn his own living. He was always able to devote his time and energies to his studies. This was particularly important since his health broke down after the Beagle cruise. Darwin worked while in almost continuous pain during most of his life. Yet he was known for his patience, good temper and kindness. His ill health made necessary a quiet life and regular routine which probably helped him carry on his work.

Protected by a devoted wife and surrounded by his ten children, Charles Darwin carried on a life's work dedicated to science.

Science News Letter, June 28, 1958

## ENGINEERING

## Work on British Nuclear Power Station Continues

### See Front Cover

➤ WORK BEGAN about one and one-half years ago on Britain's nuclear power station at Berkeley, Gloucestershire, England. Due to be fully operational by 1961, it is expected to be one of 16 in 1965.

The photograph on the cover of this week's SCIENCE NEWS LETTER shows night work on the construction.

Science News Letter, June 28, 1958



# Books of the Week

For the editorial information of our readers, books received for review since last week's issue are listed. For convenient purchase of any U. S. book in print, send a remittance to cover retail price (postage will be paid) to Book Department, Science Service, 1719 N Street, N.W., Washington 6, D. C. Request free publications direct from publisher, not from Science Service.

**AMERICAN AGRICULTURE:** Geography, Resources, Conservation—Edward Higbee—Wiley, 399 p., illus., \$7.95. A systematic survey of the agricultural regions of the U.S.

**ANATOMICAL ATLAS**—Maud Jepson—Rinehart, rev. ed., 30 p., illus. with drawings by author, paper, 95¢. Contains new section of the reproductive systems, and enlargement of the muscular system section.

**AUTOMATION EXPRESS, Vol. I, No. 1—International Physical Index**, 40 p., 10 issues per year, annual subscription \$57.50. Comprehensive digest of current Russian literature dealing with automation topics, in English translation.

**BASIC ELECTRICITY FOR COMMUNICATIONS**—William H. Timbie, rev. by Francis J. Ricker—Wiley, 2nd ed., 538 p., illus., \$6.25. Now extended to such areas as industrial electronics and instrumentation.

**BIOLOGICAL TREATMENT OF SEWAGE AND INDUSTRIAL WASTES, Vol. II: Anaerobic Digestion and Solids-Liquid Separation**—Joseph McCabe and W. W. Eckenfelder Jr., Eds.—Reinhold, 330 p., illus., \$11.50. For engineers and scientists engaged in the field of waste-water treatment.

**CASTILLA'S SPANISH AND ENGLISH TECHNICAL DICTIONARY, Vol. I: English-Spanish, 1611 p.; Vol. II: Spanish-English, 1136 p.**—Philosophical Lib., \$45.00 per set. Emphasis is on technological branches likely to develop most rapidly. Terms of pure science are excluded, but commercial and legal terms with technical connotations are included.

**CHEMICAL PUBLICATIONS: Their Nature and Use**—M. G. Mellon—McGraw-Hill, 3rd ed., 327 p., illus., \$7. Takes into account the many changes which have occurred in chemical literature during the last two decades.

**CONCISE INTERNATIONAL DICTIONARY OF MECHANICS & GEOLOGY:** English, French, German, and Spanish—S. A. Cooper—Philosophical Lib., 400 p., \$6. For the practical engineer and the manufacturer doing business with foreign countries.

**CRIME AND INSANITY**—Richard W. Nice, Ed.—Philosophical Lib., 280 p., \$6. This symposium gives the student and interested layman the views of authorities in the fields of criminal law, psychiatry and psychology.

**DO COWS HAVE NEUROSES?**—June Bingham—National Assn. for Mental Health, rev. ed., 16 p., illus., paper, 25¢. Not really about cows. Word-and-picture comparisons of the "normal" person, the neurotic and the psychotic.

**EXPERIMENTS IN PHYSICAL SCIENCE**—Allen D. Weaver and James F. Glenn—Brown, W. C.,

196 p., illus., paper, \$3. A manual for the beginning science student.

**THE EVOLUTION OF DEVELOPMENT**—John Tyler Bonner—Cambridge Univ. Press, 103 p., illus., \$3.50. In three lectures the author discusses the origin, the function and the extension of development of higher forms of life.

**EYE IRRITATION FROM SOLAR RADIATION OF ORGANIC COMPOUNDS AND NITROGEN DIOXIDE**—Erskine E. Harton, Jr., and Calvin C. Bolze—Air Pollution Foundation, 64 p., illus., paper, \$3. Reports on experiments made on a number of olefins, paraffins, ring compounds, solvents, and other organic materials.

**FUNDAMENTALS OF HIGH POLYMERS**—O. A. Battista—Reinhold, 140 p., illus., \$5.50. A readable introduction to a complex subject.

**HEALTH YEARBOOK 1957**—Oliver E. Byrd, Ed.—Stanford Univ. Press, 278 p., \$5.50. Abstracts of articles from 86 different periodicals, reflecting the research, experience, and opinion of more than 300 authors, committees, and organizations in the field of health.

**HUMAN TYPES: An Introduction to Social Anthropology**—Raymond Firth, foreword by Walter A. Fairservis, Jr.—New American Lib., rev. ed., 176 p., illus., paper, 50¢. Discusses the geographical and historical factors that determine the development of racial groups.

**IMPROVING COLLEGE BIOLOGY TEACHING**—Subcommittee on College Education of the Committee on Educational Policies, Thomas S. Hall, Chairman—Nat. Acad. of Sciences-Nat. Res. Council, 70 p., illus., \$1. Reading guide on college teaching included.

**ISAAC NEWTON'S PAPERS & LETTERS ON NATURAL PHILOSOPHY AND RELATED DOCUMENTS**—I. Bernard Cohen, Ed., Robert E. Schofield assisting—Harvard Univ. Press, 501 p., illus., \$12.50. The actual texts of Newton's publications, other than *Principia* and *Optics*.

**LANDSCAPES OF ALASKA: Their Geologic Evolution**—Howell Williams, Ed.—Univ. of Calif. Press, 148 p., photographs and maps, \$5. A beautiful book in which the U. S. Geological Survey and the National Park Service have cooperated.

**MAKERS OF MATHEMATICS**—Alfred Hooper—Random House, 402 p., illus., paper, 95¢. The story of mathematics from the time man first began to use his ten fingers for counting until he mastered the abstractions of the infinitesimal calculus.

**MATHEMATICAL TABLES AND FORMULAE**—F. J. Camm—Philosophical Lib., 144 p., \$2.75. Brings together, for easy reference, the most frequently consulted arithmetical, trigonometrical and algebraic tables and formulae.

**MATHEMATICS FOR THE LAYMAN**—T. H. Ward Hill—Philosophical Lib., 343 p., illus., \$4.75. For the general reader, shows how mathematics developed over the centuries. Exercises are included.

**MULTIVALENT FUNCTIONS**—W. K. Hayman—Cambridge Univ. Press, 151 p., paper, \$4. This

text requires previous knowledge of function theory.

**NAMES ON THE LAND**—George R. Stewart—Houghton, rev. ed., 511 p., illus., \$6. The author of *Storm* and *U. S.* 40 traces here the origin and history of place-names in the U. S., with new chapters of Alaskan and Hawaiian names.

**1001 QUESTIONS ANSWERED ABOUT ASTRONOMY**—James S. Pickering—Dodd, 420 p., illus., \$6. Here a staff member of the Hayden Planetarium answers questions about the universe around us. Tables, bibliography and index add to the book's value.

**THE PHYSIOLOGY OF MAN**—L. L. Langley and E. Cheraskin—McGraw-Hill, 2nd ed., 674 p., illus., \$6.95. A textbook with stress on presenting the basic physiological processes in an integrated and meaningful pattern.

**THE POOL AND IRVING VILLAGES: A Study of Hopewell Occupation in the Illinois River Valley**—John C. McGregor—Univ. of Ill. Press, 232 p., illus., paper, \$3.50. First report in a long-range program of study of Illinois archeology.

**THE PRESERVATION OF YOUTH: Essays on Health**—Moses Ben Maimon (Maimonides), translated from Arabic (Fi Tadbir as-Sihha), introduction by Hirsch L. Gordon—Philosophical Lib., 92 p., \$2.75. Born in Spain in 1135, Maimonides became a physician of great fame in Egypt.

**PRINCIPLES OF ELECTRONIC INSTRUMENTS**—Gordon R. Partridge—Prentice-Hall, 393 p., illus., \$11. Shows how electronic instruments function, and what they can do for us.

**A SAFE WORKLOAD FOR FARMERS WITH HEART DISEASE**—Am. Heart Assn., 12 p., illus., free upon request direct to publisher, 44 E. 23rd St., New York 10, N. Y. Based on studies of the amount of energy needed for different farm tasks under a variety of conditions. Known as the Purdue Farm Cardiac Research Project.

**STRANGE PLANTS AND THEIR WAYS**—Ross E. Hutchins—Rand McNally, 96 p., illus. with photographs by author, \$2.95. Besides describing fascinating ways of nature, contains some practical suggestions for the young naturalist.

**STRUCTURE AND EVOLUTION OF THE STARS**—Martin Schwarzschild—Princeton Univ. Press, 296 p., illus., \$6. Summarizes the present status of the theory of stellar evolution.

**TEXTBOOK OF DENDROLOGY: Covering the Important Forest Trees of the United States and Canada**—William M. Harlow and Ellwood S. Harrar—McGraw-Hill, 4th ed., 561 p., illus., \$8.75. For beginning students of forestry.

**THEORETICAL CRIMINOLOGY**—George B. Vold—Oxford Univ. Press, 334 p., \$5. A text for advanced courses in Criminological Theory, Social Theory, and Social Conflict.

**THIS IS THE CHALLENGE: The Benton Reports of 1956-1958 on the Nature of the Soviet Threat**—William Benton, Edward W. Barrett, Ed., foreword by John Gunther—Assoc. College Presses, 254 p., illus., \$3.95. The former Senator from Connecticut here presents the problem of growing Soviet strength in education and in technical skill.

**UNIT PROCESSES IN ORGANIC SYNTHESIS**—P. H. Groggins, Ed.—McGraw-Hill, 5th ed., 1070 p., illus., \$17.50. Presents the industrial technique used in converting organic raw materials into usable products through the mastery of unit processes.

**WE THE TIKOPIA: A Sociological Study of Kinship in Primitive Polynesia**—Raymond Firth, preface by Bronislaw Malinowski—Allen, G. (Macmillan), 2nd ed., 605 p., illus., \$7.50. First published in 1936, it became a classic of modern social anthropology and had long been out of print.

Science News Letter, June 28, 1958

## MODERN JUDO and Self-defence

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## PHYSICS

## Discover Energy Unit In Rotating Liquid Helium

► THE SMALLEST indivisible unit, or quantum of energy, required to produce turbulence in rotating liquid helium has been detected for the first time.

It was discovered by Dr. W. F. Vinen of the Royal Society Mond Laboratory, University of Cambridge, England. He reports his method for spotting it in *Nature* (May 31).

Liquid helium is of particular interest to physicists because it is a substance that shows some quantum behavior on a large scale when it is cooled down to within about a degree of absolute zero, which is 459.7 degrees below zero Fahrenheit.

Other known quantum characteristics occur on the atomic scale where effects cannot be measured on an individual atom.

Dr. Vinen measured the circulation around a fine wire placed in rotating helium to obtain the first direct evidence for the quantum of circulation. He also studied the peculiar flow pattern of the very cold liquid.

Science News Letter, June 28, 1958

## GEOPHYSICS

## IGY Scientists to Study Columbus Day Eclipse

► SIX TEAMS of United States scientists will travel to the Danger Islands in the South Pacific to take "full advantage" of a total solar eclipse due on Oct. 12, 1958.

The Columbus Day eclipse will provide the scientists with an opportunity to study characteristics of the sun and of relationships between the sun and the earth that cannot be duplicated in the laboratory.

The expedition to the Danger Islands, which lies in the path of the total eclipse, is described in the *International Geophysical Year Bulletin* (June) of the U. S. National Committee for the IGY.

"The total eclipse of the sun due on Oct. 12, 1958," the IGY scientists say, "occurs at an extremely opportune time for solar studies; the solar physics studies of the IGY will provide an abundance of data on the sun for long periods before and after the eclipse. It also occurs near a period of maximum solar activity, the most active solar maximum in recorded history."

In all, the IGY scientists on the expedition will mount four ground-based optical experiments, one rocket experiment, and one ground-based electronic experiment. Preparations for the scientific study have been underway since before July 1957.

American scientists hope to arrive at the Danger Islands on Sept. 1, 1958. At the same time, at least two expeditions, and possibly three, will be carried out by other nations. The Japanese plan an extensive series of observations from a base on Suvarow Island, several hundred miles east of the American site. Russia has indicated that it will send an eclipse expedition out, too, but has not said where it will be based. New Zealand will establish a base at Atotu, several hundred miles west of the American base.

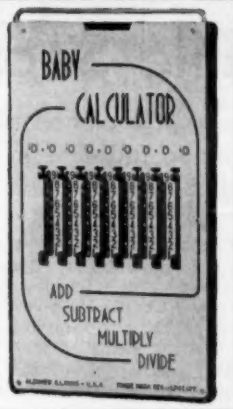
Science News Letter, June 28, 1958

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## PUBLIC SAFETY

# File Second A-Test Suit

**Marshall Island residents are among those who have joined together in a second attempt to bring suit against the U. S. Government demanding end to nuclear bomb tests.**

► A SCHOOL teacher who lives only 200 miles from the U.S. Atomic Energy Commission's Pacific nuclear test site filed a Federal Court suit in Washington demanding an end to nuclear bomb detonations.

Dwight Heine of Ebon Atoll, Marshall Islands, claims the United States has gone far from home to conduct dangerous nuclear tests at the expense of the health and welfare of the peoples whose homes have been invaded for the tests.

Mr. Heine was joined in filing the suit against Defense Secretary Neil H. McElroy and members of the Atomic Energy Commission by 15 fellow Marshall Islanders, including his wife and six children, one American Samoan, three Japanese and an American from Wisconsin.

Their attorneys, who also filed the earlier suit brought by Dr. Linus Pauling and others, hope to consolidate the new suit with the older one still awaiting a hearing and have the two heard and judged together. (See SNL, April 12, p. 228.)

They believe the Heine suit will "possibly add substance" to the Pauling suit.

In an attempt to prevent further nuclear weapons tests during the "long time it may take to bring these matters to a head," they also requested an injunction which would bring an immediate halt to the tests. Arguments on the injunction request are scheduled to be heard in U.S. District Court for the District of Columbia, July 7.

The Heine suit, which is identical to the Pauling suit in most respects, goes beyond the earlier suit in two major points:

1. Most of the plaintiffs in the new suit

claim they are directly injured in some form due to their proximity to the test site, although they point out that any person, no matter where he resides, should be an "interested party" because of the possibility of world-wide fallout;

2. The new suit charges that the tests violate freedom of the high seas and the United Nations trust agreement for the U. S. Mandate over the Marshall Islands.

Mr. Heine told reporters land has been taken from his people and citizens have been displaced to make the tests possible, and that the economy of the islands is suffering.

One of the Japanese plaintiffs is the captain of a fishing boat who has been put out of business, the suit charges, because he "cannot enter said area for fear of being blown to death or being seriously injured" and because the waters and fish of that part of the Pacific are said to be contaminated by radioactive fallout.

Mr. Heine was the Marshall Islands spokesman before the U.N. Trusteeship Council in 1954 when the islanders made a formal request for suspension of nuclear tests.

He was formerly superintendent of elementary schools under Navy administration of the islands, and became administrator for education when the Department of the Interior took over.

Mr. Heine currently is on leave of absence to Honolulu where he is taking advanced college courses in education.

Science News Letter, June 28, 1958

## PUBLIC HEALTH

# Healthy Economy Fights TB

► IN ADDITION to the success of several antituberculosis drugs, a high standard of living and a healthy economy have helped immeasurably in the fight against tuberculosis, Dr. Herman E. Hilleboe, New York State commissioner of health, told SCIENCE SERVICE.

The past few years have shown a decline in the number of deaths and cases of tuberculosis in New York as well as in the rest of the country. The standard of living is constantly rising. This contributes to the fight against malnutrition and poor housing facilities, the breeding grounds for tuberculosis.

Although the death rate from tuberculosis is generally higher in the South than in the North, the rate of decline in recent years in all parts of the country has been approximately the same.

Concentrated efforts have been made by public health authorities to discover individuals with tuberculosis and isolate them until recovery.

Case-finding through chest clinics, mass chest X-ray surveys and routine chest examinations of persons admitted to general hospitals, plus the availability of hospital beds and clinical facilities, have been important factors in improving the tuberculosis situation, Dr. Hilleboe said.

New York State is currently closing its Broadacres Sanatorium at Utica, one of six state tuberculosis hospitals, with a capacity of 182 beds. In 1957, four county tuberculosis hospitals in upstate New York were closed.

A decrease in reported cases and deaths has occurred throughout the country since the widespread use of new drugs and sur-

gical advances in the tuberculosis field. Streptomycin and paraaminosalicylic acid (PAS) came into general use around 1950 and isoniazid (INH) became available in 1952.

In 1957 there were 467 deaths attributed to tuberculosis in upstate New York. From 1949 to 1957 the decrease in the TB death rate was 76%. During the same period, the drop in newly reported cases was 60%.

The Veterans Administration in Washington also reports an average decrease of 16% in the daily number of tuberculosis patients in Veterans hospitals since 1954.

"For the ultimate control of tuberculosis it is essential that our economic status remain high and that all the tools available to the medical and public health professions be used to the fullest extent. Among these tools none is more essential than the availability of an adequate number of hospital beds," Dr. Hilleboe concluded.

Science News Letter, June 28, 1958

## NUTRITION

# Child's Nearsightedness Aided by Special Diet

► CHILDREN suffering from nearsightedness can be helped by feeding them a special, well-balanced diet, P. A. Gardiner of Guy's Hospital, London, England, reported.

A one-year study was conducted comparing experimental and control groups of children who suffered non-congenital nearsightedness. The experimental group received a diet containing an amount of animal protein equal to ten percent of the caloric count. The controls continued on their regular diets. Results of the experimental group revealed:

1. The gradual deterioration of vision associated with nearsightedness was arrested in some children 12 years of age or more.

2. Some of the children 12 years of age and older actually experienced some improvement in their nearsighted condition.

3. Among those children under 12 who received the special diet the deterioration rate toward poorer vision was slower than that of the control group.

The difference in treatment between the two groups lay primarily in the increased amount of animal protein consumed by the treated group, although it is clear that other factors were influential, the ophthalmologist says in the British journal *Lancet* (May 31).

It is certainly possible that the balance of the diet and not the animal protein content may be a factor, he reports, since diets were radically changed by the treatment.

Previously, it had been known that nearsightedness, or myopia, increased more in children who refused animal protein in their diet than those whose tastes were more general.

It has also been known for some time that myopic children whose vision is deteriorating eat less food for every pound they increase in weight than do normally sighted children and those nearsighted children whose vision is not becoming poorer.

Science News Letter, June 28, 1958



## Humidity Affects Life Span of Bacteria

► THE HIGHER the humidity, the longer the life span of disease-producing bacteria.

Thus, humidity may be a determining factor in transmission of airborne diseases such as the common cold and other respiratory illnesses, two scientists report.

Disease-producing bacteria suspended in air seem to remain alive and probably infective for much longer periods of time when the humidity is high than when it is low.

Germs suspended in air, such as after coughing or sneezing, are killed by sunlight in direct proportion to the intensity of the light. This germicidal action of sunlight, however, is definitely limited by the amount of moisture in the air, Dr. James M. Beebe and Mrs. Gerda W. Pirsch of the Army Chemical Corps Biological Warfare Laboratories, Fort Detrick, Frederick, Md., report in the *Journal of Applied Microbiology*.

At high relative humidities, the germ-killing power of sunlight was found to be low, or lacking entirely. Moisture appeared to form a barrier which absorbed the sun's germicidal rays.

Even though the sun appears bright, the scientists note, its germicidal effectiveness can be quite limited on humid days. This might explain the belief that the sunny, dry Southwest is a more healthful climate than some of the humid areas of the United States, they say.

Science News Letter, June 28, 1958

## Questions

**ASTRONOMY**—How fast is the center of the Milky Way expanding? p. 403.

**GEOPHYSICS**—Where will American scientists go to observe the solar eclipse of October 12? p. 409.

**NUTRITION**—What effect has diet had on myopia in children? p. 410.

**PHYSICS**—What is the important distance factor in playing golf? p. 405.

Photographs: Cover, British Information Services; p. 403, R. G. LeTourneau, Inc.; p. 405, Atomics International; p. 406, Committee of Stainless Steel Producers; p. 412, Eastman Chemical Products, Inc.

## Do You Know?

Dimethoate, a new experimental *parasiticide*, has demonstrated marked efficiency in controlling nasal botflies that attack sheep.

A widely accepted theory explains that *appetite* signals are turned on and off by fluctuating levels of glucose in the blood.

A high degree of thyroid activity increases, and a low degree decreases, resistance to *tuberculosis*.

Some 50 species of the *Anopheles* mosquito are known to transmit *malaria*; however, only female mosquitoes carry the malaria parasite from man to man.

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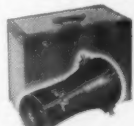
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Science News Letter, June 28, 1958

✿ **PORTABLE DEHUMIDIFIER** removes two to three gallons of water from the atmosphere every 24 hours. Mounted on wheels, it has a removable rust proof drawer for emptying. A permanent drain can be installed. The room dehumidifier can also be connected by an automatic control.

Science News Letter, June 28, 1958

✿ **WATER SKIING TOW ROPES** are made of polyethylene plastic. The laid construction has a breaking strength of approximately 1,100 pounds, while the braid's breaking strength is a little less. Each unit has 75 feet of one-quarter-inch yellow rope attached to either single or double hardwood handles.

Science News Letter, June 28, 1958

✿ **LOCOMOTIVE TOY** runs on the floor or table top, without tracks. The remote-control toy, shown in the photograph, is



powered by standard flashlight batteries. Push buttons and a steering wheel move the locomotive forward, in reverse, or to right or left. Its body is made of an acetate plastic. The toy also serves as a bank.

Science News Letter, June 28, 1958

✿ **BLACK LIGHT KIT** has all the ingredients for the experimenter to put together his own lamp. The kit contains a four-

watt fluorescent type bulb with a filter, a ballast, a starter and starter socket, lamp mounting, a switch, diagram and black light chalk in nine colors. Three bottles of water colors are also included.

Science News Letter, June 28, 1958

✿ **LEATHER JACKETS** for beverage glasses prevent "wet bottoms." Hand-made of leather, the tall coasters are held together by gold or black braid laces. They are available in five colors, red, harvest, tan, black and brown.

Science News Letter, June 28, 1958

✿ **CIRCULAR SLIDE RULE** for engineers, students and plant executives is pocket-size. Said to be simple and accurate, the slide rule can be used for multiplication, division and to find proportions. Instructions are included with the rule.

Science News Letter, June 28, 1958

✿ **WALL VENTILATOR** is designed to reduce the moisture content of masonry walls. Two of the metal ventilators are secured to concrete walls, where one acts as a fresh air intake and the other as a stale air exhaust. They are described as preventing dampness and eliminating mildew and musty odors.

Science News Letter, June 28, 1958



## Nature Ramblings



By HORACE LOFTIN

► A VARIETY of names have been provided for animals according to their eating habits: Meat eaters are called carnivores, plant eaters are herbivores, insect eaters are insectivores, and so on and on.

What kind of name can be given the goat, then, that animal with an appetite for everything from lush foliage to wall-paper?

Old Billy does have a wide variety on his menu, though to be strictly technical we have to place him along with more choosy herbivores. Rumors that he eats tin cans are completely false, he merely eats the wrappers off the cans!

This hardy appetite is one of the principal reasons for the popularity of the goat among people in many areas of the world where rock, desert and infertile soil abound. Billy can make his living in even the most inhospitable climate by diligent close crop-

### Hoofprints in the Desert



ping of the scant vegetation and even browsing of tree limbs and bark.

And for this same reason, the goat is possibly one of the chief causes of agricultural poverty in these areas. He can do such an effective job of eating, that flocks of goats can practically denude an area of its scant vegetation over a period of time.

This results in rapid run-off and loss of the little rain that falls on such land.

Soil and soil fertility are lost through erosion of earth stripped of its vegetation cover. Especially in some areas of the Middle East goats, drought, poor soils and poverty go hand in hand.

Agricultural experts have repeatedly warned of the possible disastrous results of raising goats on sub-marginal agricultural land. In some countries, stringent laws have been passed against possession of goats in certain areas. But the ancient ways too often prevail against reason and even law. The goat is milk, meat and clothing to the poor there; the animal costs little to buy and less to feed.

Thus, a vicious cycle continues, with agricultural poverty increasing as good soil, fertility and moisture decrease. Many lands that were once those of "milk and honey" are now deserts.

The goats' cloven hoof tracks can be seen in the wastelands.

Science News Letter, June 28, 1958

